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PHRs are now in hospitals; what does this mean for quality?

Experts see benefits for safety, as well as increased patient involvement

Although they've been around for a while, personal health records, or PHRs, have been grabbing bigger headlines recently with the launch of Google Health, bringing the two largest brands on the Internet (Microsoft already had launched its HealthVault product) squarely into the health care arena. But even more significant for hospital quality managers, two big names in the health care world — The Cleveland Clinic and Beth Israel Deaconess Medical Center — have become Google integration partners. That means that with the permission of their patients, these systems will have access to all the medical information those patients have stored on Google Health.

As this new world of healthcare information technology begins to be explored on the hospital and health system levels, questions are naturally arising: Does this raise privacy concerns? What about HIPAA? What impact will this have on quality? With a reported 200 PHRs available, how does a hospital decide which ones it wants as partners?

Just what is a PHR?

With so many acronyms flying around such as EMRs (electronic medical records) and RHIOs (regional health information organi-

Key Points

- Hospitals can have immediate access to vital information such as meds, history, recent test results.
- HIPAA does not apply to PHRs, since patients control transfer of information.
- Let your patient population determine which PHRs you select.

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zations), it's important to distinguish a PHR from these other types of systems.

"The notion of a PHR is that a patient can be the steward of their own medical information," explains **John Halamka**, MD, chief information officer at Beth Israel Deaconess in Boston. "You can go online and see your credit card statement the same day as you charge something, but how many people can go online and see their last cholesterol test results? In the interest of quality, patients should be able to see the tests, all their medications, and be able to hand off that information to the next provider. A PHR is really that vehicle."

"The most effective PHRs allow patients to

pull together all of their medical information from all different places and locate them in one central virtual place," adds **Jon White**, MD, director of health IT at the Agency for Healthcare Research and Quality (AHRQ). "They will also allow you to do things with it once you pull the information together, such as seek out the best treatment for what you have and find the best provider — hospital or doctor."

PHRs also help people around that patient do a better job of taking care of his or her health, he continues. "That could be a hospital; if they are connected to the PHR it gives them access to the person's health care information from places outside," he offers. "It could also be the family caregiver."

So, for example, if a patient lands in the ED or is admitted to the hospital, his or her providers won't have to go to all the patient's doctors and labs and pharmacies to get the information they need. However, cautions White, "I can't say that any of these PHRs do it perfectly yet."

Better quality?

Does immediate access to all this information mean better quality — and ultimately, better outcomes — for hospital patients?

"What if, every time you went to the ED, that doctor had a comprehensive list of all your meds?" Halamka asks rhetorically. "What if they knew that five different doctors were writing you meds that combined together could kill you? I'd say that information would be pretty helpful."

In addition, he notes, PHRs can eliminate redundancies and save money. "Let's say you get a \$2,500 MRI, then go across town and get another because that second hospital did not have your records," he poses. "The PHR enables the patient to move that data simply by giving permission to do so and indicate with whom the information can be shared. This reduces cost, and engages the patient."

"Anything that encourages transparency and gives the patient more access to information about their health will help quality," asserts **Paul Tang**, MD, MS, an internist and vice president, chief medical information officer at the Palo Alto (CA) Medical Foundation. "It also encourages them to take a more active role, and that's what PHRs do. One of the things we've found out is that people look up information frequently — particularly lab results."

One of the most powerful aspects of a PHR,

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Editorial Questions

For questions or comments, call **Steve Lewis** at (770) 442-9805.

Tang continues, is that it gives the patient the ability to graph results. "It lets you see how changing your health behavior can change your test results," he observes.

"No. 1, if a PHR is used properly, there is no substitute for having a patient engaged and informed about the care they are receiving," says White. "Secondarily, it gives access to information about the patient that the provider might not otherwise have had. It allows those who decide about their care to obtain better quality information, and it improves communication with the patient."

It can also benefit the hospitals that provide superior care, he continues. "If a patient uses their PHR as means of seeking the best care, a hospital can engage the public through that vehicle. They can shine if they do well; that information will be made accessible to patients that have the PHR, and they will seek out those facilities that perform well on their condition."

"It's the connectivity that makes it so useful," adds Halamka. "You can push a button and all the patient's life experiences come together automatically."

Privacy concerns?

How do patients feel about all of their life experiences flashing before someone's eyes? And what about HIPAA? "If the patient is the one who can move the information, the hospital is out of the loop," says White. "It removes liability concerns."

The better systems, he says, are more secure than paper records. "However, people who use them should have their eyes wide open and read the fine print about what these companies can do with the information," he cautions. "But Google and Microsoft, for example, have been very aggressive about adopting policies to ensure privacy."

"HIPAA is designed for providers, so systems like Google are not covered," adds Halamka. "This is no different than having a patient go to the health records management department and getting a paper record, then handing it off to another caregiver."

"Typically, something within the actual site handles requests for information," adds Tang. "You check a box that says so and so can have all, part, or none of your information. The good ones will go to the level of an item-by-item selection."

As for security, says Halamka, Google has set

up separate secure servers, so as not to commingle the information with, for example, YouTube or gmail. "There is a separate infrastructure just for health, and they have their own security people, who are quite good," says Halamka.

Tang agrees that most PHRs are very secure. "The weakest link has been patients sharing passwords," he notes.

As for patients, they seem pleased with their experiences. "Patients really like it; our satisfaction rate is 94%," says Tang. Two of their favorite features, he says, are access to test results and communicating with their doctors. "We have secure patient messaging so they can communicate directly to the doctor," he explains.

"We have 40,000 patients on our own personal health record; we offered [Google Health] to them and about 5,000 have chosen to sign up," says Halamka. Google Health, he adds, "brings together all your test data, labs, and pharmacies, and then you also get decision support, information about drug interactions, monographs about diseases, and so on," he says. "All of this is totally controlled by the patient; we don't transfer information — they say send the data to Google."

"There are signs, and some evidence, that PHRs do improve patient satisfaction," adds White. "Being from AHRQ, I care about quality, and satisfaction is one piece of it. I think PHRs will help; we are in the process of generating more evidence."

How do you choose?

With so many PHRs to choose from, selecting one (or three) seems like a daunting task. "I would only do it when the patients ask for it," says Halamka. "We will transfer our data to any secure location a patient asks us to."

In terms of specific providers, he continues, "you should look at their privacy policies to make sure they say they won't sell the data — that they will keep the patient in charge."

Getting his information system to "talk" to Google Health, he notes, "was not that hard; we did it in a couple of weeks." Then, on the center's own PHR, the patients were told the service was available and were given a place to click if they wanted to enroll.

But, White cautions, "your information systems have to be in a state where they can do this." In addition, he notes, your own internal policy about the sharing of information should be revisited.

“On some levels it should be a no-brainer; the patient asks for the information and they make it available — no HIPAA issue there. But there are usually [internal] policies about how information gets shared, and that needs consideration.”

As for whether to link up with a specific PHR, your patients should be the main consideration. “Go out and ask them,” Tang advises. “Look at the patient population you serve. See what kinds of things appeal to them.”

An added bonus, he says, is that “your hospital can rise in stature in the community’s eyes if you are proactive in getting patients new ways to help them take care of themselves.”

Typically, he adds, there is no charge for a hospital to link up with a PHR. “There would, or course, be IT costs to set up the infrastructure,” he notes.

As for the patients, says White, “there is not a fee for Google Health or Microsoft’s HealthVault; others have fees, but they are not exorbitant.”

Looking to the future

“Over time we will see patients get more and more data from more and more providers, assuring better quality of care, drug interaction warnings, and less redundant testing,” Halamka predicts. Specialty clinics, he says, will particularly benefit. “In one MS clinic we have 100% of the patients on it, because there are very complex medication regimens,” he explains. “In a primary care clinic, we only have about 25%.”

“There seems to be an increasing number of groups trying to do this; it will only get bigger,” says Tang. The big issue in the future, he says, will be interoperability. “This way, you wouldn’t have to connect to the various PHRs one by one,” he explains. “But everything would still require consent.”

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Baylor system takes annual NQF quality award

Anatomy of a winning initiative

Baylor Healthcare System, based in the Dallas/Ft. Worth area of Texas, has been named the recipient of this year’s National Quality Healthcare Award by the National Quality Forum (NQF).

The award, says **Janet Corrigan, PhD, MBA, CEO and president of NQF**, is given to recipients who demonstrate “a very high level of commitment to quality throughout the organization — with regular reports that flow to the board and senior management.” This year, she adds, NQF paid special attention to the management of patients with chronic illness across time and over different settings. “It’s also really important to have a strong commitment to transparency,” she adds.

Baylor, says Corrigan, was ranked high by the jurors across many areas, “but in particular they went above and beyond the call of duty when it came to measuring quality and making it part of everyone’s job within the organization. There was constant feedback on performance going to clinicians, and all members of the care team.”

“Our quality and patient safety goals are tied to senior management bonuses — it’s part of a balanced scorecard we use,” notes **Paul Convery, MD, senior vice president and chief medical officer for Baylor Healthcare**. “We have great outcomes, we share information on our web site with the public, and we are transparent internally as well.”

Anatomy of an initiative

A close look at an initiative to standardize the clinical approach to pneumonia patients provides insight into the way Baylor approaches QI. “We had a group of physician leaders convene and look at the evidence and develop an evidence-based order set for the care of pneumonia,” says Convery. “Then, we brought it to our systemwide quality committee [the system has 13 hospitals], which is not only made up of senior leaders and physicians, but is attended by all the hospital presidents.” This “best care committee” then approved the order set.

Next, says Convery, he and other quality leadership selected a group of physician champions, whom Baylor pays “a small amount” for their time.

Prior to rollout, many of the key individuals

Key Points

- Processes are in place to address individuals or facilities that are slow to adopt new initiatives.
- Class on quality improvement is available to all staff members.
- Senior management compensation is linked.

took a course called “ABC Baylor,” a seven-day QI class spread out over a few months that teaches both quality leadership and QI processes. “Senior management, hospital presidents, doctors, nurses, administrators all go through it,” says Convery. “As part of the class, each participant has to do a PI project.”

So far, he says, about 600 people across the organization have gone through the full course. (A shorter two-day course has reached another 1,000.) They are taught by internal faculty. “We encourage everyone who is new to take the course as soon as possible, but when you work on an initiative, you definitely do it; for instance, it’s part of being a physician champion,” Convery explains.

Following implementation, measurements were taken for both compliance and performance. “In this case we found a couple of places that had not rolled out very much, and we focused on accountability at those hospitals,” says Convery.

Specific action plans were developed to help improve compliance. “It involves nurses and physicians, then it goes to the system quality department, then it comes to me, and I review it,” says Convery. The board will even ask about issues such as these, he says. “Accountability is a big part of how we approach quality,” he notes.

Today, the order set is used in 80% of all Baylor pneumonia cases. “We have shown that it has contributed to high core measure scores, reduced mortality rates and improved patient care,” he asserts.

The information system at Baylor enhances the team’s ability to measure results, he continues. “We have the ability to get outcomes almost on a real-time basis — a few weeks after the data close,” says Convery. “We have a good data system and people that respond.”

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Bar codes help improve safety in operating room

System helps identify additional miscounts

Researchers at Brigham and Women’s Hospital (BWH) in Boston have shown that using bar-code technology to augment the counting of surgical sponges during an operative procedure increases the detection rate of miscounted and/or misplaced sponges. Their research is published in the April 2008 issue of the *Annals of Surgery*.¹

Lead author **Caprice Greenberg, MD, MPH**, a surgeon at the BWH Center for Surgery and Public Health and the Dana-Farber Cancer Institute Center for Outcomes and Policy Research, and her colleagues found that the bar-code system detected more counting errors than traditional counting methods — both in cases where sponges were misplaced and counted incorrectly. Researchers also report that although the technology introduced new difficulties in the operating room, clinicians felt confident that the technology was effective and easy to use.

“I had done a study in 2002 where we collaborated with experts from human factors engineering to see what had the biggest impact on safety, and we identified communication and workloads with competing tasks,” Greenberg recalls. “We found that [sponge] counts were really disruptive to surgical flow. So, we wanted to do an observational study to see what goes on with counts, and if there were any technological solutions out there.”

The idea of using bar codes in surgery, says Greenberg, grew out of the success that bar-coding technology had in reducing medication errors. It works like this: An individual data matrix code is embedded onto the same sponges the team would otherwise use. They are scanned by a handheld computer before they are put on the operative field and after surgery is com-

Key Points

- Bar-code system outperforms traditional counting methods.
- System prevents the double-counting of sponges.
- Several new technologies for counting now available.

pleted. "Since each sponge has a unique identifier code, we can not only tell the count, but which one is not accounted for," says Greenberg.

Manual counting vs. 'machine'

The study was a randomized controlled trial funded by Surgicount Medical, the manufacturer of the technology used. A total of 300 patients were studied; 150 were randomized to a traditional manual count and 150 to manual counting with the bar coding as an adjunct.

"We actually identified significantly more miscounts and misplaced sponges," notes Greenberg. The researchers reported that a total of 32 discrepancies were found (miscounted or misplaced sponges) with the second method, but only 13 found using the traditional manual method.

One specific error the scanning system avoids, Greenberg continues, is double-counting sponges. "You can't double-scan a sponge; the system will alert you," she explains. "That's a nice example of how the system can really help."

Members of the surgical team are not yet at the point where they feel comfortable relying totally on the new system, she adds. "They've been counting manually for so long," Greenberg notes. "For now, it should be viewed as an adjunct for counting."

Greenberg says there are a couple of different new approaches to improving surgical safety. "One is bar coding, and then there is also RFID [radio frequency]," she says. "Bar-coding has already been proven to work in meds; as RF technology improves and we learn more about it, it may end up being the one used most, but now both are feasible and commercially available, and a number of institutions are using them."

In fact, Greenberg notes, her team is evaluating two available systems. Meanwhile, she says, "our results are kind of hard to ignore. At this point we are pretty convinced our data show one of these technological solutions should be implemented."

Reference

1. Greenberg C, Diaz-Flores R, Lipsitz SR, Regenbogen S, et al. Bar-coding Surgical Sponges To Improve Safety: A Randomized Controlled Trial. *Ann Surg*, April 2008; 247(4):612-616.

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Collect these data to assess nursing quality

Impact on reimbursement will be 'huge'

The quality of nursing care will have a much bigger impact on reimbursement than ever before, as a result of the Centers for Medicare and Medicaid Services' (CMS) "no pay" conditions, according to a recent analysis.¹

According to the researchers, CMS' final inpatient prospective payment system rule signals the need for "a serious commitment to nursing quality," says **Ellen Kurtzman**, MPH, RN, author of the analysis and assistant research professor in the department of nursing education at George Washington University in Washington, DC.

"So many of the events that CMS talks about go back to nursing care. The impact on nursing is going to be huge," says **Susan B. Hassmiller**, PhD, RN, FAAN, senior program officer and the leader of the human capital team at the Robert Wood Johnson Foundation in Princeton, NJ. "Any CEO who wants to stay the course with quality and not go further in the red financially really needs to pay a great deal of attention to how their nurses are going to be supported in doing their job."

Effective for patients discharged as of Oct. 1, 2008, the rule eliminates additional Medicare payments for eight conditions including: inpatient pressure ulcers, catheter-associated urinary tract infections, vascular catheter-associated infections, certain surgical site infections, objects left in the patient during surgery, air embolism, and blood incompatibility.

Since most of these conditions are linked by evidence to nursing care, hospitals are bolstering quality improvement programs geared toward nurses.

"Additional data will now be collected on these hospital-acquired conditions. The data will need to be analyzed, tracked, and translated into actionable QI strategies," says Kurtzman. "As CMS augments the list of inpatient hospital-acquired conditions, which it intends to do, an additional burden for measurement, reporting, and improvement will fall on quality."

At York Hospital (PA), part of the WellSpan Health network, the orientation program for new nurses has been changed to address the CMS changes. Nurses are asked to be vigilant in identifying patients admitted with community-acquired pressure ulcers and urinary tract

Key Points

- Impact of CMS' no pay conditions on nurses will be bigger than ever before, analysis says.
- Playing the blame game would be 'disastrous' for a hospital.
- Quality managers should be training frontline staff in data collection, analysis.

infections, and documenting this, says **Gregory M. Gurican**, RN, MS, MBA, the hospital's nursing performance improvement coordinator.

Currently, the organization's rate of hospital-acquired infections and pressure ulcers is less than half that of national benchmarks, adds Gurican.

Data to assess the quality of nursing care are collected at the unit, service line, and house-wide levels, in addition to core measures and the organization's database of clinical indicators impacted by nursing and nursing care activities.

"Many hospitals will be paying closer attention to those areas where nursing might impact the CMS 'no pay' list," says Gurican. "At York Hospital, no special changes in quality improvement programs were necessary. However, something may be required in the future if we find the need to refine nursing protocols to reduce the financial impact of the CMS changes."

The worst thing an organization could do is "play the blame game," says Hassmiller. "We hope that does not happen. If nurses got blamed left and right for the money that a hospital has to pay out, that would send the morale of the nursing profession deeper than it already is," she says. "That would be disastrous for a hospital."

Closer collaboration

As a quality professional, you will need to collaborate with nurses and others to reduce or eliminate the eight "no-pay" conditions. The conditions warrant attention from multiple disciplines — nutrition services, infection control, case management, risk management, and patient safety, says Gurican.

There is a definite trend toward decentralization of the performance and quality improvement functions, leading to closer collaboration with nursing staff, says Gurican. Quality managers are training frontline staff in data collection and analysis. In some cases, external training is given, with qualified individuals placed directly on service lines to support nursing efforts.

"Here at Wellspan Health, there is a movement

toward having many individuals trained in Lean Six Sigma outside the standard quality management and quality control departments," says Gurican. "So the talent is dispersed throughout the organization."

Plan-Do-Study-Act has been the methodology of choice at Wellspan for many years to provide quick cycles of change at the unit level, service line level, and hospital-wide level. Newly established multidisciplinary clinical effectiveness teams are addressing disease- and care-specific issues.

York Hospital has several Six Sigma green belts already in place, and more will be added in the near future. The hospital plans to add about 10 new staff members to the ranks each year who are trained in lean methodologies, at every level within the organization.

"I strongly believe that this will improve quality initiatives and improve patient care," says Gurican.

At Cedars-Sinai Medical Center in Los Angeles, nurses are involved in all aspects of quality. This includes creation, implementation and evaluation of quality plans; collecting data; and preparing quality performance dashboards, says **Linda Burnes Bolton**, DrPH, RN, FAAN, vice president of nursing and chief nursing officer.

The chief nursing officer and all nursing directors co-lead quality teams. Currently, there are 20 teams, each with one staff nurse, a nurse manager, and other team members.

Five nurses conduct daily reviews of core measures, abstract medical records, and enter performance data at the patient, unit, and physician level. Quality performance is incorporated into the hospital's Unit Practice Council, and unit-based champions are used to coach staff performance. Nurses certified in quality improvement coach and remind physicians on what to include in their final discharge summary.

"We require physicians to write an order justifying why a patient should not receive an influenza or pneumococcal vaccine," says Burnes Bolton. She leads an interdisciplinary group that includes medical staff, residents, nurses, pharmacists, and patients on the process of mapping the evidence of conditions "present on admission."

"This is ongoing work and we have demonstrated some success with hospital-acquired pressure ulcers," says Burnes Bolton. "We are using forcing functions requiring physicians to address in their H&P or discharge summary items identified from the nursing assessment or assessment by others, such as dietitians who identify the

patient was at risk due to poor nutritional status.”

Here are three ways to work with nurses on QI initiatives:

- **Don't “take over.”**

“If you want to improve quality on the front lines, the nurses have to be responsible for coming up with their own solutions,” says Hassmiller.

“We have found that when QI professionals take the lead and tell people what to do, it does not work as well. If a very strong QI person is telling nurses what to do, that's not very engaging for nurses. They want to be part of the solution.”

- **Make data collection a joint effort between nursing, QI, and IT staff.**

“Nurses do need to step up to the plate and take responsibility for QI on their units,” says Hassmiller. “QI professionals know the techniques to make change happen. They need to provide those tools to nurses, such as doing run charts or different ways of collecting data.”

- **Brainstorm with nurses for solutions.**

“With the new CMS ruling, there are safeguards that need to be in place so hospitals can continue to get reimbursed,” says Hassmiller. “Get with the nurses in a room and help them brainstorm solutions. Then say, ‘Which three solutions do you think would have the best effect on this unit?’ Don't wait to implement these — start improving immediately.”

- **Have competitions between units.**

For instance, if an “interruption free” medication time is implemented on several units, medication errors can be tracked to see who comes up with the best results. “Then you can go back and determine what the best unit did to achieve the least number of errors,” says Hassmiller. “Or if another unit didn't make much progress, ask them how we can improve that.”

Reference

1. Kurtzman ET. A summary of the impact of reforms to the hospital inpatient prospective payment system (IPPS) on nursing services. Washington, DC: George Washington University, Department of Nursing Education, School of Medicine and Health Sciences; 2007. <http://www.rwjf.org/files/research/ippswhitepaper2007.pdf>.

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The Robert Wood Johnson Foundation has launched a virtual resource center for its hospital quality improvement program, *Transforming Care at the Bedside*. The resource provides a framework for developing and implementing quality improvement at the front lines, and can be accessed at www.rwjf.org. ■

Study is first to show RRTs decrease pediatric deaths

Potential is ‘dramatic’

Your hospital is likely in the process of implementing a rapid response team (RRT), if one is not already in place — but the team is probably focused on adult care. Now a small but growing number of hospitals are implementing pediatric RRTs to improve the care of children.

After a pediatric RRT was implemented at Lucile Packard Children's Hospital in Stanford, CA — a 264-bed academic children's hospital — hospital mortality rates were reduced by 18% over a 19-month period. Codes occurring outside the intensive care unit (ICU) were reduced by 72%.¹

In December 2004, the Institute for Healthcare Improvement (IHI) recommended that hospitals implement RRTs as part of its 100,000 Lives campaign. But while a number of studies showed that RRTs decreased deaths and codes outside the ICU in adult inpatients, there wasn't much evidence that the same was true for children.

“There were a few other pediatric studies in the literature to help guide us,” says **Paul J. Sharek**, MD, MPH, chief clinical patient safety officer at Lucile Packard. “The IHI recommendations were based totally on adult literature.”

The hospital's journey began in 2002, when it set out to decrease the number of codes occurring outside the ICU, one of the indicators reported to

Key Points

- More pediatric hospitals adding rapid response teams and adult hospitals are looking at implementing pediatric RRTs.
- Build a culture that supports your RRT.
- Collect data to gauge effectiveness of RRT.

the hospital's board on the quality and safety dashboard.

"We just weren't able to get improvements for that outcome measure, despite a number of expensive and thoughtful interventions," says Sharek. "For example, in part to improve this outcome, we implemented a hospitalist program." Although the quality and safety outcomes resulting from this new program are substantial, this program did not impact codes outside of the ICU setting at all, she says.

"Basically in some ways we were desperate," says Sharek. "We tried something that was not proven in pediatrics but made a whole lot of sense, and had been increasingly proven in the adult population."

Trend is growing

In 2005, Lucile Packard was one of only a handful of children's hospitals implementing an RRT. "But the landscape has changed a lot over the last couple of years," says Sharek. "Many more are attempting this now."

The hospital's patient safety department initiated the development of the RRT. "It's often the quality and safety department that ignites this intervention. They have a huge role," says Sharek. "And now that there is more supporting evidence in the pediatric literature, they are armed with a lot more information than they used to be."

Adult hospitals are also looking at implementing pediatric RRTs. "That is the question I get most frequently, 'How would you put together an RRT for children being taken care of in adult settings?'" says Sharek. "Over half the kids hospitalized in the U.S. are taken care of in adult-based settings. So that is a question that needs to be answered."

For example, hospitals want to know if they would need a separate RRT just for pediatric patients. Sharek says that ideally, the team should be comprised of pediatric specialists, but acknowledges that this is difficult for adult hospitals since their available pool of pediatric-trained staff is limited.

Still, despite the challenges, "the writing is on the wall" in terms of needing to implement RRTs for both adults and children, according to Sharek. "The evidence base is emerging from multiple angles, and there is massive pressure to implement these," he says. "The question is not if anymore — the question is how."

Two previous studies showed that pediatric RRTs decreased codes outside the ICU, but didn't demonstrate a change in mortality rates.^{2,3}

"Our study made the link from code decrease to mortality decrease," says Sharek. "It's a hard study to deny the findings of, truthfully. If you take care of children in your setting, you really have to strongly consider the use of these teams. The potential to decrease national mortality rates for children is dramatic."

Here are some ways to maximize the impact of a pediatric RRT:

- **Encourage nurses to call the team.**

Every time an RRT call is made at Lucile Packard, a debriefing meeting is held with the team to make sure the caller's concern was appreciated and there was no ill will.

"It does require a big cultural shift so nurses are not ridiculed for being too sensitive or nervous about their patients," says Sharek. "We spent a lot of time working on encouraging an environment of calling."

The goal is for nurses to feel comfortable calling the RRT, even if they just have a bad feeling about their patient.

Although many of the RRT calls at Lucile Packard were triggered by measurable changes in a patient's status — a change in breathing pattern, blood oxygen content or blood pressure — other calls were made because of a feeling that something just wasn't right. Those were the calls that turned out to be the most valuable, says Sharek.

"This gets back to the point that if the nurse feels supported, they are likely to call earlier," says Sharek. "I think we were more successful than others who implemented a pediatric RRT in part because the calls came in earlier. And we think that is because the nurses felt very supported in calling."

- **Use a "patient-centric" model.**

This is the key to successful RRT implementation, says **Lori C. Marshall**, PhD, RN, manager of patient care services at Children's Hospital Los Angeles. "Prior to implementation, you need to identify if there is resistance to the type of collaboration found in an RRT," says Marshall.

Next, build a culture that supports RRT collaboration. This means not taking away the

autonomy of the primary attending physician as the decision maker, yet at the same time, giving nurses additional resources in the best interest of their patient, says Marshall.

“It is important to understand the perceptions held by the various disciplines who will be involved in RRT activation, and members of the RRT team,” she says.

For responders, you have to consider their time constraints and activities that must be left when they are deployed to an RRT. For example, the team member may already be responding to a code or trauma.

“Your processes must be designed with contingencies so they function under all conditions,” says Marshall.

- **Implement the RRT in stages if necessary.**

Children’s Hospital Los Angeles chose to pilot its RRT on two units, to ensure there were enough pediatric intensive care unit (PICU) fellows to respond to calls. “We gradually spread the RRT to other inpatient areas as the numbers of PICU fellows was increased,” says Marshall. “We knew by a certain date there would be a full set of resources. That became the target date to spread the change across all inpatient units.”

- **Collect data to measure effectiveness.**

In addition to codes outside the ICU and mortality rates, IHI also recommends collecting data on the number of calls per month per number of patients, with a target of between 25 to 35 calls per 1,000 patients per month.

In addition, consider measuring satisfaction with the RRT by surveying both responders and unit staff, advises **Tina Logsdon, MS**, solutions manager at Child Health Corporation of America in Shawnee Mission, KS, which is spearheading an initiative to eliminate codes outside the ICU in pediatric hospitals. The initiative includes implementing, fine-tuning, and including families in pediatric RRTs, among other process changes. “Beyond that, it’s difficult to find other reliable data to measure the impact of an RRT, especially once the volume of codes becomes low,” she says.

To evaluate staff satisfaction, hospitals have developed a brief survey with questions such as:

For floor staff:

- Was the RRT supportive to you and the care of your patient?
- Were the RRTs assessment and recommendations helpful?
- Was the team respectful of your need for help?

For responders:

- When I arrived in the patient care area, was

it clear who was requesting assistance?

- Was shifting your work assignments to accommodate your role on the team smooth or chaotic?

At Children’s Hospital Los Angeles, the RRTs impact is evaluated with standardized measures that are part of the Child Health Corporation of America’s Eliminating Codes Collaborative.

“This provides a national comparative between us and others implementing RRTs, including code rates,” says Marshall.

Internal measures are also collected, including response time, responders, documentation quality, and satisfaction with the RRT process for those initiating the calls.

“Additionally, we utilize post-RRT case review to analyze outcomes and address system and process issues that arise,” says Marshall. “This helps us identify the just-in-time rapid cycle changes as part of our ongoing improvement efforts.”

Quality professionals track RRT measures daily. These data are sent out to a small RRT committee for review. “We prioritize the situations where we know things didn’t go well, as verbalized by the responders and those initiating the RRT,” says Marshall. “The quality professional’s role is then to verify whether the RRT outcomes met our established goals.”

Early on, two RRT calls were converted into a “code blue” immediately upon arrival of the team. Since the initial concept of the RRT was not to emulate the code team, the PICU charge nurse did not bring the intubation drugs like she would normally do for a code.

However, after the two patients required an immediate need for intubation, a decision was made to have the team bring the intubation medications just in case.

“The quality professional’s role in that circumstance was to get the RRT information available for a truly rapid cycle review and change,” says Marshall. “Then, subsequent outcomes were monitored.”

Reference

1. Sharek PJ, Parast LM, Leong K, et al. Effect of a rapid response team on hospital-wide mortality and code rates outside the ICU in a children’s hospital. *JAMA* 2007; 298(19):2,267-2,274.

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MRI safety is the focus of new Sentinel Event Alert

The Joint Commission has issued a Sentinel Event Alert on preventing accidents and injuries in the magnetic resonance imaging (MRI) suite. (To access the complete alert, go to www.jointcommission.org. Under "Sentinel Event," click on "Sentinel Event Alert," "Issue 38 - February 14, 2008: Preventing accidents and injuries in the MRI suite.")

A total of five MRI-related cases have been reported to The Joint Commission's Sentinel Event database, resulting in four deaths, including one case caused by a projectile and three cardiac events. The other case involved a misread MRI scan that resulted in delayed treatment.

An analysis of the FDA's Manufacturer and User Facility Device Experience Database revealed 389 reports of MRI-related events over a 10-year period, including nine deaths. Three were related to pacemaker failure, two to insulin pump failure, and the remaining four events related to implant disturbance, a projectile, and asphyxiation from a cryogenic mishap during installation of an MRI imaging system. More than 70% of the 389 reports were burns and 10% were projectile-related.

"We are already following The Joint Commission's recommendations," reports **Deanne Roe**, director of radiology at St. Joseph's

Hospital and Medical Center in Phoenix. "Our area has restricted access, and all patients are screened a minimum of two times prior to entering the magnetic field."

The hospital's MRI employees are trained and updated on an ongoing basis as new implantable and environmental devices become available on the market.

Safety training is also offered to staff from other departments such as facilities, environmental services, and operating room staff. "We have MRI-compatible physiologic monitors in every scanner, as well as compatible anesthesia and infusion equipment," says Roe. "Magnetic field safety is a primary focus for MRI staff."

At Medical College of Georgia in Augusta, clinical quality is the top strategic priority established by the hospital's board. "MRI safety is regularly tracked by our patient care quality and safety program as one of the ways in which we address this top organizational priority," says **David A. Snyder, MD**, vice president of patient care quality and safety.

Any problems identified with MRI safety are tracked through Patient Safety Net, an incident reporting system that helps identify opportunities for improvement internally. The system also benchmarks the hospital's performance against that of other hospitals and medical centers in the University HealthSystem Consortium, a benchmarking organization in Chicago that serves more than 200 hospitals and medical centers nationally.

"MRI safety incidents at Medical College of Georgia have been rare, and none to my knowledge have resulted in a significant injury to a patient or staff member," says Snyder.

An MRI safety training module is available to staff as a web-based tool, so training can be completed at convenient times. "This also allows us to track that training. Our goal is to have 100% of our staff trained annually on this important topic," says Snyder.

"We are also very aware of the recent Joint Commission safety alert concerning MRI safety," adds Snyder. "We were already compliant with

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many of the best practices identified in the alert. And we now have specific actions in progress that, when completed, will make us fully compliant.”

Staff training materials are being updated to include revised MRI safety screening procedures. Also, a preliminary remote screening is now done to ensure that patients with absolute contraindications to an MRI are not exposed to the magnet environment.

At St. Joseph’s each MRI scanner is checked every day before patients are scanned, by performing scans for quality assurance. “This assures image quality and patient safety, and is also used to identify any potential scanner problem that could be fixed through preventive maintenance rather than scanner down time,” says **Karen Brown**, education and quality coordinator for radiology services.

There is no formal image quality assessment, since the radiologist communicates quality concerns on a daily basis. For instance, if there is an artifact on the image that cannot be resolved with parameter changes, the field engineer would be called in to troubleshoot and fix the problem.

Brown does monthly MRI audits on the following indicators:

- pertinent patient records and forms scanned into the picture archiving and communications system;

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- metal screen forms completed;
- contrast screening form completed;
- glomerular filtration rate documented;
- MRI progress notes for inpatients completed and signed;
- signed orders;
- orders include pertinent clinical indication;
- unreported procedures;
- the number of days reports were delayed;
- the number of exams not sent to billing within 24 hours of completion;
- turnaround times for reports;
- breakdown times to dictate, transcribed and final, by radiologist.

“The radiologists do monthly peer review for discrepancies, readmissions, and adverse outcomes,” says Brown. “Daily, the department audits and reports exams older than 24 hours not dictated.”

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